

has failed to recognize significant differences possessed by the presently claimed invention over the document relied upon in the final Office Action.

In numbered paragraph 1 of the Office Action, independent claim 1, along with various dependant claims, are rejected as being anticipated by U.S. Patent 6,201,453 (Chan et al.). This rejection is respectfully traversed.

Applicant has disclosed a microstrip-waveguide transition is disclosed for transmission of electromagnetic energy. As exemplified in Fig. 1, a microstrip-waveguide transition 100 includes a waveguide 102 having an open end 104, a dielectric substrate 106 attached to the open end, and a microstrip probe 110 on the dielectric substrate 106. A capacitive susceptance occurs across the open end when the open end is exposed to electromagnetic energy and wherein the capacitive susceptance is countered with inductive susceptance (e.g., paragraph [0012]). As shown in Figs. 1 and 2, the microstrip probe 110 and 210 exits a broad wall of the microstrip-waveguide transition 100.

The foregoing features are broadly encompassed by claim 1, which recites, among other features, a waveguide having an open end; a dielectric substrate attached to the open end; a microstrip probe on the dielectric substrate, wherein a capacitive susceptance across the open end when the open end is exposed to electromagnetic energy; and means for countering capacitive susceptance with inductive susceptance.

Regarding claim 1, the Examiner asserts at page 4 of the Office Action that the Chan et al. patent teaches "the impedance of the loop conductor 38 will generally be the same as the waveguide 31, as known in the art, impedance matching is

required for maximum power transfer." Applicant respectfully disagrees with the Examiner's assertion.

The Chan et al. patent does not disclose means for countering the capacitive susceptance with inductive susceptance as claimed. The Chan et al. patent discloses that the impedance of the loop conductor 38 can match the impedance of the waveguide 31 by shaping the loop conductor 38 along the waveguide 31. However, the impedance of the loop conductor 38 as disclosed by the Chan et al. patent relates to "approximately 400 Ω " (col. 3, lines 30-35), which is different from the characteristic impedance of the waveguide. This "approximately 400 Ω " is a mere resistance value. In contrast to the Applicant's disclosure that capacitive susceptance occurs across an open end when the open end is exposed to electromagnetic energy and wherein the capacitive susceptance is countered with inductive susceptance (e.g., paragraph [0012]), the Chan et al. patent does not teach or suggest inductive susceptance to counter the capacitive susceptance as claimed.

Further, the Chan et al. patent discloses an H-plane waveguide probe. Figs. 3-5 show a second leg 42 of the transition conductor 39 exiting a narrow wall of the waveguide probe. The exit as taught by the Chan et al. patent produces an H-plane waveguide output (abstract), whereas the broad wall exit as shown in the applicant's Figs. 1 and 2 results in an E-plane probe. These structural differences in themselves result in different probe results.

Regarding claims 4 and 9, the Examiner asserts at page 3 of the Office Action that the Chan et al. patent teaches a backshort cap attached to an open end with a conductive adhesive capable of countering capacitive susceptance with inductive susceptance. These assertions are respectfully traversed.

The Chan et al. patent discloses a cover 34 secured to a waveguide 21 by welding or soldering (col. 3, lines 8-11). Unlike the claimed backshort cap, the cover 34 as shown in Figs 3-5 of the Chan et al. patent is larger in size than the waveguide 31. The Chan et al. patent does not disclose or suggest that the cover 34 acts to counter capacitive susceptance with inductive susceptance as recited in claim 4. The Chan et al. patent does not disclose or suggest that the cover 34 is attached to an open end with a conductive adhesive.

For the foregoing reasons, Applicant's claim 1 is allowable over the applied reference. Claims 12-23 were indicated to be allowed; and Applicant has submitted that claims 3, 10 and 11 are also allowable. The remaining claims depend from independent claim 1, and recite additional advantageous features which further distinguish over the documents relied upon by the Examiner. As such, the present application is considered in condition for allowance.

All objections and rejections raised in the Office Action having been addressed, it is respectfully submitted that the application is in condition for allowance and a Notice of Allowance is respectfully solicited.

Respectfully submitted,

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Date: May 23, 2005

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